IN THE CLAIMS

Please amend claims 1, 8-11, 13, 14, 23 and 25, cancel claims 7 and 26, and add new claim 27, such that pending claims 1, 3, 5, 6, 8-25 and 27 are as follows:

1. (Currently Amended) A method for the detection of points of interest in a source digital image for computer recognition of a physical object depicted within the source digital image, said method implementing a wavelet transformation associating a sub-sampled image, called a scale image, with a source image, and wavelet coefficients corresponding to at least [[one]] two detail ~~image~~ images, for at least one level of decomposition,
a point of interest being a point associated with a region of the image showing high frequencies, wherein the method comprises the following steps:

the application, in a computer processor, of said wavelet transformations to said source image, during which for each decomposition level, there are determined at least two detail images corresponding respectively to at least two directions predetermined by said wavelet transformation;

the merging, in a computer processor, of the coefficients of said detail images so as not to give preference to any direction of said source image;

the construction, in a computer processor, of a unique tree structure of wavelets coefficients from the wavelet coefficients of each of said detail images; and

the selection, in a computer processor, of at least one point of interest, implementing:

construction of at least one salience map, assigning salience values to the wavelet coefficients from the tree structure of wavelets coefficients, a salience value representing the interest of the wavelet coefficient;

construction of a tree structure of said salience values;

[[by]] analysis of [[said]] the tree structure of said salience values.

2. (canceled)

3. (Previously Presented) A method according to claim 1, wherein the detail images comprise:

- a detail image representing the vertical high frequencies;
- a detail image representing the horizontal high frequencies; and
- a detail image representing the diagonal high frequencies.

4. (canceled)

5. (Previously Presented) A method according to claim 1, wherein said step for the construction of a tree structure relies on a zerotree type of approach.

6. (Previously Presented) A method according to claim 1, wherein each point of the scale image having minimum resolution is the root of a tree with which is associated an offspring node respectively formed with each of the wavelet coefficients of each of said detail image or images localized at the same position,
and then recursively, four offspring nodes are associated with each offspring node of a given level of resolution, these four associated offspring nodes being formed by the wavelet coefficients of the detail image that is of a same type and at the previous resolution level, associated with the corresponding region of the source image.

7. (canceled)

8. (Currently Amended) A method according to claim [[7]] 1, wherein a salience map is built for each of said resolution levels.

9. (Currently Amended) A method according to claim [[7]] 1, wherein, for each of said salience maps, for each salience value, a merging is performed of the pieces of information associated with the three wavelet coefficients corresponding to the three detail images so as not to give preference to any direction in the image.

10. (Currently Amended) A method according to claim [[7]] 1, wherein a salience value of a given wavelet coefficient having a given level of resolution takes account of the salience value or values of the descending-order wavelet coefficients in said tree structure of said given wavelet coefficient.

11. (Currently Amended) A method according to claim [[7]] 1, wherein a salience value is a linear relationship of the associated wavelet coefficients.

12. (Previously Presented) A method according to claim 11, wherein the salience value of a given wavelet coefficient is computed from the following equations:

$$\begin{cases} S_{2^{-1}}(x,y) = \alpha_{-1}\left(\dfrac{1}{3}\displaystyle\sum_{u=1}^{3}\dfrac{D^{u}_{2^{-1}}(x,y)}{Max(D^{u}_{2^{-1}})}\right) \\ S_{2^{j}}(x,y) = \dfrac{1}{2}\left(\alpha_{j}\left(\dfrac{1}{3}\displaystyle\sum_{u=1}^{3}\dfrac{D^{u}_{2^{j}}(x,y)}{Max(D^{u}_{2^{j}})}\right)+\dfrac{1}{4}\displaystyle\sum_{u=0}^{1}\sum_{v=0}^{1}S_{2^{j+1}}(2x+u,2y+v)\right) \end{cases}$$

13. (Currently Amended) A method according to claim 12, wherein the parameter [[α_k]] α_j is equal to -1/r for all the values of [[k]] j.

14. (Currently Amended) A method according to claim [[7]] 1, wherein said selection step comprises a step for building a tree structure of said salience values.

15. (Previously Presented) A method according to claim 14, wherein said step for the construction of a tree structure of said salience values relies on a zerotree type of approach.

16. (Previously Presented) A method according to claim 14, wherein said selection step advantageously comprises the steps of:

- descending-order sorting of the salience values of the salience map corresponding to the

minimum resolution; and

- selection of the branch having the highest salience value for each of the trees thus sorted out.

17. (Original) A method according to claim 16, wherein said step for the selection of the branch having the highest salience value implements a corresponding scan of the tree starting from its root and a selection, at each level of the tree, of the offspring node having the highest salience value.

18. (Previously Presented) A method according to claim 1, wherein said wavelet transformation implements the Haar base.

19. (Previously Presented) A method according to claim 1, wherein a minimum level of resolution 2^{-4}.

20. (Previously Presented) A method according to claim 1, comprising a step for the computation of an image signature from a predetermined number of points of interest of said image.

21. (Original) A method according to claim 20, wherein said signature is used especially to index images by their content.

22. (Previously Presented) Application of the method for detecting points of interest in a source digital image according to claim 1 to at least one of the fields selected from the group consisting of:

- image watermarking;
- image indexing; and
- the detection of faces in an image.

23. (Currently Amended) A device for the detection of points of interest in a source digital image, implementing a wavelet transformation associating a sub-sampled image, called a scale image, with a source image, and wavelet coefficients corresponding to at least [[one]] two detail ~~image~~ images, for at least one level of decomposition,
a point of interest being a point associated with a region of the image showing high frequencies, wherein the device comprises:

- means for the application of said wavelet transformations to said source images during which for each decomposition level, there are determined at least two detail images corresponding respectively to at least two directions predetermined by said wavelet transformation;
- means for the merging of the coefficients of said detail images so as not to give preference to any direction of said source image;
- means for the construction of a unique tree structure of wavelets coefficients from the wavelet coefficients of each of said detail images; and
- means for the selection of at least one point of interest implementing:
  construction of at least one salience map, assigning salience values to the wavelet coefficients from the tree structure of wavelets coefficients, a salience value representing the interest of the wavelet coefficient;
  construction of a tree structure of said salience values; and
  [[by]] analysis of [[said]] the tree structure of said salience values.

24. (Previously Presented) A device according to claim 23, wherein the means for the application, means for the merging, means for the construction and means for the selection comprises program code instructions.

25. (Currently Amended) Computer program product comprising program code instructions recorded on a ~~carrier usable in a~~ computer readable medium, comprising computer-readable

programming means for the implementation of a wavelet transformation associating a sub-sampled image, called a scale image, with a source image, and wavelet coefficients corresponding to at least [[one]] two detail ~~image~~ images, for at least one level of decomposition,
a point of interest being a point associated with a region of the image showing high frequencies wherein the computer program product comprises:

- computer-readable programming ~~means~~ recorded on a computer readable medium to carry out the application of said wavelet transformation to said source image, during which, for each decomposition level there are determined at least two detail images corresponding respectively to at least two directions predetermined by said wavelet transformation;
- computer-readable programming ~~means~~ recorded on a computer readable medium to carry out the merging of the coefficients of said detail images so as not to give preference to any direction of said source image;
- computer-readable programming ~~means~~ recorded on a computer readable medium to carry out the construction of a unique tree structure of wavelets coefficients from the wavelet coefficients of each of said detail images; and
- computer-readable programming ~~means~~ recorded on a computer readable medium to carry out the selection of at least one point of interest by implementing:
  construction of at least one salience map, assigning salience values to the wavelet coefficients from the tree structure of wavelets coefficients, a salience value representing the interest of the wavelet coefficient;
  construction of a tree structure of said salience values; and
  analysis of [[said]] the tree structure of said salience values.

26. (Canceled).

27. (Newly Added) A method for indexing at least one image, wherein it comprises a step of computing a signature of the image from a predetermined number of points of interest in the

image, selected by implementing the method for the detection of points of interest according to claim 1.